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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 10/618,757 | 07/15/2003 | Mikio Kuwahara | 520.37431CX1 | 6946 |

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| EXAMINER | |
|---|---|
| CHOW, CHARLES CHIANG | |
| **ART UNIT** | **PAPER NUMBER** |
| 2685 | |

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

| Office Action Summary | Application No. | Applicant(s) | |
|---|---|---|---|
| | 10/618,757 | KUWAHARA ET AL. | |
| | Examiner | Art Unit | |
| | Charles Chow | 2685 | |

*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

1)☒ Responsive to communication(s) filed on *15 July 2003*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

4)☒ Claim(s) *1-5* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☐ Claim(s) _____ is/are rejected.

7)☒ Claim(s) *4 and 5* is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

**Application Papers**

9)☐ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on *15 July 2003* is/are: a)☒ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____ .
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

## Detailed Action

### *Claim Rejections - 35 USC § 103*

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

1. Claim 1 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim (US 6,049,307) in view of Yun (US 6,463.295 B1).

Regarding **claim 1,** Lim teaches a radio communication system [Fig. 4-5] comprising an array antenna 510, Fig. 5]; and

a weighting means 580 that provides a downlink array weight for a downlink on the basis of information about bearings of a plurality of incoming signals received through a plurality of uplinks [ when transmit, downlink, the beam control 590 adjusts beam direction based in the comparison of each received signal intensity, with weights befit beam directions selected by the beam control, col. 3, lines 34-50; col. 5, lines 62-64, Fig. 5, steps 550, 580, 590, 520].

Lim fails to teach the transmission power control information about transmission data to be transmitted through a downlink. Yun teaches the downlink power control method for transmitting form communication station to remoter user based on the determined weighting factor, estimated quality, col. 6, lines 1-29], in order to reduce the interference [col. 5, lines 22-27]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Lim with Yun's transmit downlink power control based on received signal quality, in order to reduce the interference.

2. Claim 2 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Agee et al. (US 2002/0122,465 A1) and Bevan et al. (US 6,311,075 B1).

Regarding **claim 2,** Lim teaches a transmission control method for a transmit/receive station [Fig. 5], providing a downlink array weight for transmitting downlink signals to a station [weight from memory unit 580 for the transmitting weighting control of the antenna array 510, Fig. 5] such that said downlink array weight represents an antenna pattern having a maximum beam in a direction of a first uplink signal transmitted from said one station received using said array antenna [when transmit downlink signal, the beam control 590 adjusts, maximum, beam direction based in the comparison of each received signal intensity, with weights befit beam directions selected by the beam control, col. 3, lines 34-50; col. 5, lines 62-64, Fig. 5, steps 550, 580, 590, 520].

Lim fails to teach the having null in a direction of a second uplink signal transmitted from a remote station other than said one of the remote station received using said array antenna. Agee et al. (Agee) teaches these features [ Fig. 13, the null of a second uplink from beam B, other than remote A using beam A, paragraph 0238], in order to reduce the interference from adjacent signal [0237]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Lim with Agee's null in antenna pattern for a second uplink, in order to reduce the interference from the adjacent signal.

Lim & Agee fail to teach the base station which communicates with a plurality of mobile stations via an array antenna using a code-division multiple access system (CDMA system), receiving using said array antenna, a plurality of uplink signals transmitted from said plurality of mobile stations. Bevan et al. (Bevan) teaches these features [ the CDMA base station communicates with plurality of mobile stations using base station antenna array, and to receive plurality of uplink signals from mobile stations, col. 4, lines 30-49, Fig. 1], for

providing an antenna array with down looking antenna DLA for the close-in mobile, in order to reduce interference [abstract]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Lim & Agee with CDMA base station antenna with DLA, in order to reduce the interference.

3. Claim 3 is rejected under 35 U.S.C. 103(a) as being unpatentable over Lim in view of Agee, Bevan, as applied to claim 2 above, and further in view of Yun (US 6,462,295 B1). Regarding **claim 3,** Lim, Agee & Bevan fail to teach the wherein said downlink array weight is provided according to transmission power control information for a plurality of downlinks to said plurality of mobile stations. Yun teaches the these features [ the initial downlink transmitting power control strategy using initial relative transmit weight vector, col. 6, lines 10-16; steps 703-704, 711 in Fig. 7(a)], in order to reduce the interference [col. 5, lines 22-27]. Therefore, it would have been obvious to one of ordinary skill in the art at the time of invention to modify Lim, Agee, Bevan with Yun's transmit downlink power control based on received signal quality, in order to reduce the interference.

***Claims Objection***

4. Claims 4-5 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims. Applicant claims filing date of 7/30/1999 from continuation of Patent 6,597,678. Regarding **claim 4,** the cited prior arts from Lim, Agee, Bevan & Yun fail to provide the reason to combine with **Kamel et al. (US 6,697,343 B1),** for the wherein said transmission power control information is determined according to a transmission rate for a corresponding downlink. Regarding **claim 5,** the cited prior arts from **Lim, Agee, Bevan &**

**Yun, Kamel, Scherzer (US 6,108,565)**, fail to teach the direction for the **maximum beam** is determined according to spatial information extracted from a plurality of symbols of the **first** uplink signal, **and** the **direction for the null** is determined according to spatial information extracted from a plurality of symbols of the **second** uplink signal.

***Conclusion***

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Charles C. Chow whose telephone number is (571) 272-7889. The examiner can normally be reached on 8:00am-5:30pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Edward Urban can be reached on (571) 272-7899. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Charles Chow CC.

October 20, 2005.

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